

REMARKS

Claims 1, 4-9, 11, 22-23, 25 and 34 are pending in the present application. Claims 2-3, 10, 12-21, 24, and 26-33 were canceled without admission. Claims 1, 4, 16 and 22 were amended herein for clarification. Claims 22, 23, 25 and 34 are presently withdrawn due to a restriction requirement. It is believed that no new matter has been entered

Rejections under §§102 and 103

Claims 1-11 were rejected under 35 U.S.C. 102(b and e), or in the alternative, as obvious over Long et al (US 6,685,771), Rechmeier et al (US 4,110,121), Watson et al (US 4,022,630), Pennell (US 4,081,285), Elsner (US 1,220,735), Clark (US 811,902) or Onodera et al (JP 52071522). Claims 1-11 were also rejected under 35 U.S.C. 103(a) as being unpatentable over Long et al, Rechmeier et al, Watson et al, Pennell, Elsner or Onodera et al alone or in view of Clark. These rejections are respectfully traversed.

None of the references, either singularly or in combination, teach or suggest a method of producing cement clinker as recited in claim 1. The method comprises the steps of providing a raw feed comprising limestone, clay and an **organic waste/mineral by-product mixture**, burning a fuel comprising an **organic waste/mineral by-product mixture** to heat a kiln, heating the raw feed to form cement clinker. In the **organic waste/mineral by-product mixture**, the organic waste comprises a material selected from the group consisting of dewatered sewage sludge filter cake, animal manure, pulp and paper waste, fermentation waste, shredded paper and cardboard, and food waste. The mineral by-product comprise a coal combustion by-product comprising one or more materials selected from the group consisting of fly ash, bottom ash, fluidized bed ash, boiler slag and flue gas desulfurization by-products. In addition, the **organic waste/mineral by-product mixture** also comprises an alkaline material.

To summarize, none of the references, either singularly or in combination, teach or suggest, *inter alia*: 1) an **organic waste/mineral by-product mixture** of (A) organic waste, (B) mineral by-product, and (C) alkaline material; and 2) an **organic waste/mineral by-product mixture** utilized in the raw feed AND as a fuel as recited in claim 1.

Long (6,685,771) is directed to a process of producing Portland cement by incorporating a mineral based particulate into Portland cement. The mineral based particulate may comprise fly ash, a mineral by-product (col. 3, line 17); however, Long fails to teach that the mineral based

particulate is mixed with an organic waste. Long teaches the burning of a high value fuel waste, but only specifies oil based paint as a material with a high value fuel waste. Consequently, Long fails to teach an organic waste/mineral by-product mixture used in the raw feed and as a fuel, as recited in claim 1. As a result, Long also fails to teach or suggest all elements of claim 1.

Rechmeier (U.S. 4,110,121) teaches a process for producing cement clinker from limestone, clay, iron oxide and sand in a kiln by using a fuel comprising organic waste such as automobile tires. Rechmeier fails to teach any of the recited species of the organic waste or the mineral byproduct, let alone a mixture of the organic waste and mineral by-product used in the raw feed and the fuel. As a result, Rechmeier also fails to teach or suggest all elements of claim 1.

Watson (U.S. 4,022,630) teaches a process of making Portland cement by using municipal waste (i.e. household trash) in a raw feed and as a fuel (in conjunction with a conventional fuel) for firing the cement kiln. (Col. 2, lines 6-13). As a result, Watson may teach organic waste; however, there is no teaching of a mixture of organic waste and mineral byproducts as recited in claim 1. Accordingly, Pennell also fails to teach or suggest all elements of claim 1.

Like Watson, Pennell (U.S. 4,081,285) teaches the manufacture of Portland cement using refuse in the raw feed and in the fuel. (Cols. 4 and 5) The refuse may constitute organic waste; however, Pennell fails to teach mineral by-products comprising a **coal combustion by-product** comprising one or more materials selected from the group consisting of fly ash, bottom ash, fluidized bed ash, boiler slag and flue gas desulfurization by-products, and consequently also fails to teach the mixing of the refuse with mineral by-products. Accordingly, Watson also fails to teach or suggest all elements of claim 1.

Elsner (1,220,735) teaches a method of producing cement from a feed including combustion residue of sewage. However, Elsner does not teach that the feed is a mixture of organic waste and mineral by-product as recited in the claims. Also, Elsner does not teach that the organic waste/mineral by-product mixture is used as a fuel. Accordingly, Elsner also fails to teach or suggest all elements of claim 1.

Onodera teaches the use of oil sludge in the production of cement clinker. Specifically, oil sludge is combusted, and the combustion heat is used to fire the cement firing apparatus. Onodera fails to teach or suggest a mixture of organic waste and mineral by-product, or the use

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of the mixture in the raw feed or the fuel. Consequently, Elsner also fails to teach or suggest all elements of claim 1.

Clark fails to cure the deficiencies of the above references. Clark teaches producing hydraulic cement from the residue of mined ores. This is not a mineral by-product comprising a **coal combustion by-product** as recited in the claims. Furthermore, Clark fails to teach organic waste; therefore, Clark fails to teach an organic waste/mineral by-product mixture as recited in claim 1. Accordingly, the above cited references, either singularly or in combination, fail to teach or suggest all elements of the claimed invention. Consequently, the rejections under §§ 102 and 103 are believed to be overcome and reconsideration is respectfully requested.

The Examiner is encouraged to contact the undersigned to resolve efficiently any formal matters or to discuss any aspects of the application or of this response. Otherwise, early notification of allowable subject matter is respectfully solicited.

Respectfully submitted,
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